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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|---------------------|------------------|
| 09/941,623 | 08/30/2001 | Seung-Gi Shin | P56420 | 6732 |
| 7590 | 11/13/2003 | | EXAMINER | |
| Robert E. Bushnell | | | LAO, LUN YI | |
| Suite 300 | | | ART UNIT | PAPER NUMBER |
| 1522 K Street, N.W. | | | | 2673 |
| Washington, DC 20005 | | | 6 | |

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/941,623 | SHIN ET AL. | |
| | Examiner | Art Unit | |
| | Lao Y Lun | 2673 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 October 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-25 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____.
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-18 and 22-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bassetti et al(5,757,338).

As to claims 1-3, 5-18 and 22-25, Bassetti et al teach a computer system comprising an LCD display(22); a clock generator(a clock generator in PC)(see figures 6-7; column 5, lines 24-29 and column 2, lines 30-33); a graphic processing unit(72, 52, 54, 56) for converting an image signal provided from at least one of the CPU and a memory(50) into a signal displayed on the LCD(22) and a spread spectrum unit(74) provided between the graphic processing unit(72, 52,

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54, 56) and the LCD(22) for modulating a frequency of the clock signal from the clock generator within a predetermined frequency range(see figures 7-12, 15; column 2, lines 30-33; column 7, lines 2-8; column 8, lines 52-68; column 9; column 16, lines 10-68 and column 17, lines 1-41).

As to claims 1 and 16, if applicants think the a spread spectrum unit(74) is not provided between the graphic processing unit(72, 52, 54, 56) and the LCD(22), it would have been obvious to have a spread spectrum unit(74) locate between the graphic processing unit(72, 52, 54, 56) and the LCD(22) since such modification would have involved a mere change in the location of the spread spectrum unit(74) and it is generally recognized as being within the level of ordinary skill in the art.

As to claims 2, 5 and 22, Bassetti et al teach the spread spectrum unit(74) being arranged between the graphic processing unit(72, 52, 54, 56) and the LCD display transmitter(62)(see figure 7 and column 9).

As to claims 6, 8, 17 and 23-25, Bassetti et al teach the spread spectrum unit(74) being installed on a clock signal line for transmitting the clock signal(see figure 7).

As to claims 12 and 14, Bassetti et al teach the step of modulating the frequency(74) being between the steps of converting the image signal(from first clock rate(MCLK to second clock rate VCLK) and the transmitting the image signal(62)(see figure 7 and column 9).

As to claims 3, 10 and 18, Bassetti et al teach the spread spectrum unit(74 or 82 or 82') modulating the frequency of the clock signal by linearly increasing or decreasing the frequency of

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the clock signal(see figures 3, 7, 10-13; column 3, lines 47-62; column 6, lines 66-68; column 7, lines 1-8; column 13, lines 45-68; column 14 and column 15, lines 1-3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bassetti et al(5,757,338) in view of Leung et al(6,580,432).

Bassetti et al fail to point out the spread spectrum unit being integrally formed with either one of the graphic processing unit and a liquid crystal display transmitter.

Leung et al teach the spread spectrum unit(130) can be integrally formed with the graphic processing unit(see figure 1 and column 3, lines 27-36). It would have been obvious to have modified Bassetti et al with the teaching of Leung et al, so as to reduce the number of connection wires, ensure more stable connections and reduce amounts of hardware on its internal structure and interface.

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6. Claims 1, 5-11, 16 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al(6,229,513) in view of Chen(6,433,766).

As to claims 1, 5-11, 16 and 22-25, Nakano et al teach a computer system comprising an LCD display(10); a clock generator(a clock generator in PC)(see figure 1; column 4, lines 40-67 and column 5, lines 1-11); a graphic processing unit(170, 160) for converting an image signal provided from at least one of the CPU and a memory into a signal displayed on the LCD(10) and a display control unit(110) provided between the graphic processing unit(170, 160) and the LCD display(10) for modulating a frequency of the clock signal from the clock generator(see figures 1, 4A, 4B; column 4, lines 40-67; column 5, lines 1-11; column 6, lines 58-68 and column 7, lines 1-42).

Nakano et al fail to disclose a spread spectrum unit for modulating a frequency of the **clock signal within a predetermined frequency range.**

Chen teach a computer system comprising an LCD display(31) having a spread spectrum unit(display control unit(34) for modulating a frequency of the clock signal **within a predetermined frequency range**(see figures 3-5; column 3, lines 21-68 and column 4, lines 1-45). It would have been obvious to have modified Nakano et al with the teaching of Chen, so as to provide a high quality of an LCD display and a data transmission method and device used in a liquid crystal display circuit for reducing the electromagnetic interference intensity generated from data lines(see column 1, lines 13-16).

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As to claims 5, 7, 22 and 24, Nakano et al as modified teach the spread spectrum unit(110) arranged between the display transmitter(170) and a display unit(10)(see Nakano's figure 1).

As to claim 6, 8, 23 and 25, Nakano et al as modified teach the spread spectrum unit(110) being installed on a clock signal line for transmitting a clock signal(see Nakano's figures 1 and 4A).

As to claim 10, Chen teaches a clock modulating waveform is a sine linear waveform(see figure 4).

7. Claims 4 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al(6,229,513) in view of Chen(6,433,766) and Leung et al(6,580,432).

Nakano et al as modified fail to point out the spread spectrum unit being integrally formed with either one of the graphic processing unit and a liquid crystal display transmitter.

Leung et al teach the spread spectrum unit(130) can be integrally formed with the graphic processing unit(see figure 1 and column 3, lines 27-36). It would have been obvious to have modified Nakano et al as modified with the teaching of Leung et al, so as to reduce the number of connection wires, ensure more stable connections and reduce amounts of hardware on its internal structure and interface.

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Response to Arguments

8. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that Bassetti does not teach the LCD transmitter being installed on a clock signal line for transmitting the clock signal on page 4. The examiner disagrees with that since Bassetti teach the LCD transmitter(62 or 82 or 82') being installed on a clock signal line for transmitting the clock signal(VCLS_SS) to an LCD display(22)(see figures 7, 11-14 and column 14, lines 44-46).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lūn-yi, Lāo whose telephone number is (703) 305-4873.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at (703) 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

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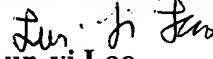
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(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

November 15, 2003


Lun-yi Lao
Primary Examiner